



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

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Commissioner

**March 8, 2013**

Mr. John Lombardi, Director of Facilities  
Cooley Dickinson Hospital  
30 Locust Street  
Northampton, MA 01061

**Re: Northampton**  
Transmittal No.: X252485  
Application No.: WE-12-023  
Class: SM79-7  
FMF No.:50025  
**Air Quality Plan Approval**

### **FINAL APPROVAL (Amended)**

Dear Mr. Lombardi:

The Department of Environmental Protection, Western Regional Office ("MassDEP") received on January 2, 2013 a Limited Plan Application from Cooley Dickinson Hospital ("Cooley Dickinson") located at 30 Locust Street in Northampton, Massachusetts. The application was submitted to document the installation and operation of two small boilers (sized below permitting thresholds), to update the existing inventory of fuel burning sources at Cooley Dickinson, to establish a new, lower facility emission cap for nitrogen oxides (NOx) and carbon monoxide (CO), and to establish the procedure(s) for monitoring wood chip usage.

MassDEP issued a **FINAL APPROVAL** for this application on February 28, 2013. Subsequent to this approval, on March 6, 2013, Cooley Dickinson requested an amendment to more clearly define the wood use monitoring procedures so they could accurately track wood use on a yearly basis. This **FINAL APPROVAL (Amended)** incorporates those requested changes by Cooley Dickinson and also two changes by MassDEP correcting the facility classification and including a statement that this permit replaces all previous MassDEP AQ approvals.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control," regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air

pollution control engineering practice, and hereby grants this Plan Approval for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which Cooley Dickinson must comply in order for the Facility to be operated in compliance with this Plan Approval.

### **1. DESCRIPTION OF FACILITY AND APPLICATION**

Cooley Dickinson currently utilizes three boilers to provide steam to the hospital campus (Emission Units 1, 2, and 3 in Table 1 below). These boilers are described in greater detail in previous facility applications and MassDEP plan approvals **RES Final Approval #1-R-97-005** dated September 10, 1997, **Conditional Approval #PV-81-C-015** dated November 19, 1981, and **Final Approval #1-P-06-019** dated February 27, 2009.

The facility is an area source of hazardous air pollutants, and has potential emissions of CO<sub>2</sub>e of approximately 65,000 tons per year.

***Please be advised that this FINAL APPROVAL (Amended) replaces in full the approvals listed above and all previous approvals for the MassDEP regulated air pollution sources at Cooley Dickinson Hospital.***

### **2. EMISSION UNIT (EU) IDENTIFICATION**

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>Emission Unit #</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device</b>
EU 1	Zurn Boiler #1	31 MMBtu/hr –ng 35 MMBtu/hr – wood	wet scrubber
EU 2	Riley Union Boiler #2	25.0 MMBtu/hr	
EU 3	AFS Boiler #4	29.9 MMBtu/hr	baghouse
EU 4	Caterpillar Model 3412 Engine/Generators #1, #2, & #3	800 kW output each	
EU 5	Miura EX 250 Boilers #8 & #9	9.8 MMBtu/hr each	

### **3. APPLICABLE REQUIREMENTS**

#### **A. Operational, Production and Emission Limits**

Cooley Dickinson is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2, as follows:

<b>Table 2</b>					
<b>Emission Unit #</b>	<b>Operational / Production Limit</b>	<b>Air Contaminant</b>	<b>Emission Limit</b>		
			<b>lb/MMBtu</b>	<b>lb/hr</b>	<b>tpy <sup>(1)</sup></b>
EU 1 (Zurn Boiler #1)	Wood Chips: ≤ 3,000 tons/calendar month ≤ 7,000 tons/year (rolling 12 month total)  Natural Gas: ≤ 2.34 MMft <sup>3</sup> /month ≤ 28.0 MMft <sup>3</sup> /year	NO <sub>x</sub> – wood	0.16		
		NO <sub>x</sub> – ng	0.10		
		CO – wood	0.60		
		CO – ng	0.084		
		SO <sub>2</sub> – wood	0.008		
		SO <sub>2</sub> – ng	n/a		
EU 2 (Riley Union Boiler #2)		NO <sub>x</sub> – oil	0.133		
		NO <sub>x</sub> – ng	0.10		
		CO – oil	0.036		
		CO – ng	0.084		
		SO <sub>2</sub> – oil	0.31		
		SO <sub>2</sub> – ng	n/a		
EU 2 (Riley Union Boiler #2)	Natural Gas: <sup>(2)</sup> ≤ 21.0 MMft <sup>3</sup> /month				
EU 5 (Miura Boilers #8 & #9)	#2 Oil (≤ 0.3% Sulfur): ≤ 34,000 gallons/month ≤ 720,000 gallons/year				
EU 3 (AFS Boiler #4 )	Wood Chips: ≤ 5,000 tons/calendar month  ≤ 26,000 tons/year (rolling 12 month total)	NO <sub>x</sub>	0.23	6.9	28.75
		CO	0.25	7.5	31.3
		PM	0.010	0.3	1.3
		SO <sub>2</sub>	0.025	0.75	3.1
		VOC	0.013	0.40	1.8
		visible emissions during normal operation	≤ 10%(instantaneous average) <sup>(3)</sup>		
		visible emissions during startup, shutdown, or malfunction	Opacity: ≤ 20%, except 20 to ≤ 40% for ≤ 2 minutes during any one hour <sup>(3)</sup>  Smoke: < No. 1 of the Chart <sup>(4)</sup> no more than 6 minutes during any one hour, at no time to exceed No. 2 of the Chart. <sup>(3)</sup>		
EU 4 (Generators #1, #2, #3)	#2 Oil (≤ 0.3% Sulfur): ≤ 3,000 gallons/month ≤ 9,000 gallons/year	NO <sub>x</sub>	4.41		
		CO	0.95		
		SO <sub>2</sub>	0.29		
EU 1–5		NO <sub>x</sub>			35
		CO			50
		SO <sub>2</sub>			20

- (1) In any rolling twelve consecutive calendar month period.
- (2) Cooley Dickinson can utilize natural gas in EU 2 and EU 5. When natural gas is used, it shall be subtracted from the allowable amount of #2 fuel oil for the boilers using the substitution of 1,000 ft<sup>3</sup> of natural gas equivalent to 5 gallons of #2 fuel oil (equivalent NO<sub>x</sub> emissions).
- (3) As determined by EPA Method 9 or by the continuous opacity monitor.

- (4) "Chart" means the Ringelmann Scale for grading the density of smoke, as published by the United States Bureau of Mines and as referred to in the Bureau of Mines Information Circular No. 8333.

**B. Compliance Demonstration**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 as follows:

<b>Table 3</b>	
<b>EU#</b>	<b>Monitoring and Testing Requirements</b>
EU 1-3	1) The Permittee shall monitor fuel consumed on a daily basis.
EU 1, 3	2) The Permittee shall monitor month ending inventories of the volume and weight of wood chips stored in the Storage Garage at the facility. Volume shall be determined by measuring the length, width and height of the wood chip storage pile. Weight shall be determined by multiplying the volume by a representative density determined by using wood chip delivery truck weight and volume determinations.
	3) The Permittee shall monitor wood chip consumption by maintaining daily delivery slips from each truck load of wood delivered to the facility. Calendar month wood chip consumption shall be determined by summing the daily delivery slips and adjusting this amount based on the starting and ending wood chip inventories.
EU 3	4) In accordance with 310 CMR 7.04(4)(a), the Permittee shall ensure this unit is inspected and maintained in accordance with the manufacturer's recommendations and tested for efficient operation at least once in each calendar year. The results of said inspection, maintenance and testing and the date upon which it was performed shall be recorded and posted conspicuously on or near the permitted equipment.
	5) The Permittee shall verify monthly that the control settings determined during the tuning required by 310 CMR 7.04(4)(a) have not changed.
	6) The Permittee shall conduct a black light test on the baghouse on a quarterly basis in order to evaluate the condition of the baghouse.
	7) The Permittee shall continuously monitor the exhaust stack visible emissions with a continuous opacity monitoring system maintained and operated in accordance with applicable procedures specified in 40 CFR Part 60 Appendix B.
EU 4	8) The Permittee shall monitor the fuel use of the generators, and shall monitor the hours of operation using hour meters.
Facility-Wide	9) The Permittee shall monitor sulfur content of each new shipment of fuel oil received. Sulfur content of the fuel can be demonstrated through fuel analysis. The analysis of sulfur content of the fuel shall be in accordance with the applicable American Society for Testing Materials (ASTM) test methods or any other method approved by the MassDEP and EPA. Fuel sulfur information may be provided by fuel suppliers.
	10) If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.

<b>Table 4</b>	
<b>EU#</b>	<b>Record Keeping Requirements</b>
EU 1, 3	1) The Permittee shall keep records of the daily delivery slips from each truck load of wood delivered to the facility.
	2) The Permitted shall keep records of the month ending inventories of the volume and weight of wood chips stored in the Storage Garage.
	3) The Permitted shall keep records of the amount of wood chips burned for each calendar month and for each rolling 12 month period.
EU 1–5	4) The Permittee shall ensure that all records are maintained up-to-date such that year-to-date information is readily available for MassDEP examination. Record keeping shall, at a minimum, include: <ul style="list-style-type: none"> <li>a. Fuel usage log.</li> <li>b. Maintenance - A record of routine maintenance activities including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.</li> <li>c. Malfunctions - A record of all malfunctions including, at a minimum: the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the facility returned to compliance.</li> <li>d. Results of black light testing on the baghouse including date of performance, person conducting the test, and deficiencies discovered by the test and fixed.</li> </ul> All records shall be kept on site for five (5) years from date of record and shall be made available to MassDEP upon request.
	5) The Permittee shall obtain certification from the fuel supplier for each shipment of fuel oil that includes the following information: <ul style="list-style-type: none"> <li>a. The name of the oil supplier</li> <li>b. Percent sulfur content (by weight); and</li> <li>c. The location where the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility or other location. As an alternative, Cooley Dickinson may elect to analyze the oil immediately after the fuel tank is filled and before any oil is combusted for each new shipment according to methods approved by MassDEP.</li> </ul>
	6) The Permittee shall maintain records that contain, at a minimum, the name of the fuel supplier, quantity, and source of the wood chips being delivered to the facility.
EU 3	7) The Permittee shall keep records of the exhaust stack visible emissions as determined by a continuous opacity monitoring system maintained and operated in accordance with the procedures specified in 40 CFR Part 60 Appendix B.

<b>Table 4 (continued)</b>	
<b>EU#</b>	<b>Record Keeping Requirements</b>
Facility-Wide	8) The Permittee shall maintain oil analysis results used to demonstrate compliance with fuel oil sulfur content requirements.
	9) The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained herein. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/dep/air/approvals/aqforms.htm#report">http://www.mass.gov/dep/air/approvals/aqforms.htm#report</a>
	10) The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) on-site.
	11) The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	12) The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) [if applicable: PCD(s)] and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	13) The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	14) The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	15) The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

<b>Table 5</b>	
<b>EU#</b>	<b>Reporting Requirements</b>
EU 1–5	1) The Permittee shall generate monthly reports in-house that document fuel use and compliance with provisions of this approval. If any limits are exceeded, the Permittee shall notify the MassDEP in writing no later than the 15 <sup>th</sup> day of the following month.
Facility-Wide	2) The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	3) The Permittee shall submit, by January 31 of each calendar year, the annual emissions report for the facility. This report shall be completed on the forms which can be found at <a href="http://www.mass.gov/dep/air/approvals/reshome.htm#agr">http://www.mass.gov/dep/air/approvals/reshome.htm#agr</a> .
	4) The Permittee shall notify the Western Regional Office of MassDEP, BWP Permit Chief by telephone [413-755-2115], email, [Marc.Simpson@State.ma.us] or fax [413-784-1149], as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	5) The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.
	6) The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	7) The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

#### **4. SPECIAL TERMS AND CONDITIONS**

The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

<b>Table 6</b>	
<b>EU#</b>	<b>Special Terms and Conditions</b>
EU 3 (AFS Boiler 4)	1) The Permittee shall ensure that only virgin wood chips are used as fuel.
	2) The Permittee shall operate and maintain the continuous opacity monitoring system in accordance with the quality assurance and quality control procedures specified in 40 CFR Part 60 Appendix B.
	3) The Permittee shall operate the opacity monitor at all times the subject emission unit is operating, except for periods of calibration checks, repair, or maintenance.
	4) The Permittee shall ensure the opacity monitor captures valid opacity data for at least 75% of the hours per day, 75% of the days per month, and 90% of the hours per quarter during which the emission unit is operating.
	5) The Permittee shall maintain on-site for the opacity monitor an adequate supply of spare parts to maintain the on-line availability and data capture requirements contained herein.
	6) The Permittee shall operate and maintain the opacity monitor as a "direct-compliance" monitor to measure compliance with the opacity limit contained herein. A "Direct-compliance" monitor generates data that legally documents the compliance status of a source.
EU 1–5	7) The Permittee shall ensure that all air pollution control system monitoring devices including, but not limited to, differential pressure gauges, pressure tap lines, thermocouples, flow rate meters, and computerized control systems are maintained in good working order and are calibrated in accordance with the manufacturers' recommendations.

	8) The fuel burning equipment at this facility may be subject to the Federal New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR Part 60 Subpart Dc). This regulation covers boilers rated between 10 and 100 million Btu/hr. Since the Department has not accepted delegation for Subpart Dc, you are advised to consult with the EPA for additional information. There may be additional notification, record keeping and reporting requirements. The address is EPA-Air Branch, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023.
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- B. The Permittee shall install and use an exhaust stack on each Emission Unit that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as "shanty caps" and "egg beaters."

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, if any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. If there are any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.



- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.
- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

#### **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

#### **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

If you have any questions concerning this **Final Approval (Amended)**, please contact John Kirzec by telephone at (413) 755-2225 or in writing at the letterhead address.

Sincerely,

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Marc Simpson  
Permit Chief  
Western Region

JK/jk  
cooley dickinson lpa we-12-023 amended 3-8-2013.doc

ecc: Yi Tian - DEP Boston  
Peter Czapienski - DEP Western Region